To the Editor of Science: I cordially sympathize in your desire to have the scientific men of the country come together in the sessions of the American Association for the Advancement of Science. I learned to love the society in the ante-bellum days, when the greatest scientific minds of the whole country made it their business to attend and to participate in the discussions. Every year new members joined us, and we used to say, Mr. X was one of the number who came to us at the Providence or Montreal meeting, and has been a constant attendant ever since. It was more convenient then for the association to meet in the summer—and perhaps one may be excused for believing the warm season to be the best for these gatherings, because of the great success of those early meetings. I like your suggestion of having two meetings annually, one in the summer and the other in the winter, and I should say the localities might be chosen to fit the season—the far south in the winter, and the far north in the summer; or there might be a contrast between the east and the west.

With provisions for two meetings, some of the affiliated societies could arrange to meet by themselves, say in the winter, and in the summer to throw all their energies into their sections. It would be an important point gained if more interest was taken in the sections of the general association at one of the meetings.

Publication holds the first place in the thoughts of many. The question arises, Shall I present my subject before the section or before my special society; and the conclusion reached is usually in favor of the latter, because the paper may be published. If one has something important to present he wishes to have it printed. Of late years the American Association for the Advancement of Science has printed only the presidential addresses, and, therefore, the tendency is to slight the sections. If there were two annual meetings there could be two volumes printed, with some of the more important papers.

Then there is no opportunity for amateurs or new recruits to be represented in type unless there be some provision for the printing of papers. Perhaps I overlook the great service Science is doing for us, which prints some of the papers that do not appear in the *Proceedings*.

Section E has instructed its committee to arrange for a summer meeting this year. All will be interested to see the outcome of this move. The meeting will probably be held at St. Louis, and thus two questions will be answered by the results. Can there be an enthusiastic meeting of a single section in the summer, and can the section hold the attention of its members in the midst of the distractions of a world's fair? C. H. Hitchcock.

SPECIAL ARTICLES.

THE TOURMALINE LOCALITIES OF SOUTHERN CALIFORNIA.

The tourmaline deposits of southern California have attracted much attention recently, owing to the development of these mines for their gem stones. A recent discovery of lilac-colored spodumene has added considerably to the interest. For the purpose of acquiring a knowledge of the character of these tourmaline deposits and of studying the associated minerals, the writer spent several weeks among these mines last summer and collected some very interesting material. In this note is given a brief account of the principal localities and of the minerals that have been found there. The writer intends to make a complete study of this remarkable field, and especially of the minerals occurring in it, many of which are of more than ordinary interest. Some of the work has already been completed * and the remainder is well under way.

The gem tourmalines occur in rather large quantities, but are inferior to the Maine tourmalines both in color and in the brilliancy of the cut gems. The localities at which they have been found are comprised in an area less than thirty miles across in northern west-central San Diego County, extending into Riverside County and including portions of Smith's Mountain and the western part of the

* 'Spodumene from San Diego Co., California,' by W. T. Schaller, Bull. Dept. Geol. Univ. of Cal., Vol. 3, No. 13.

San Jacinto Mountains. The places where working mines are located are not many and may be grouped under four heads—those at (1) Pala, (2) Mesa Grande and (3) Oak Grove in San Diego County, and those at (4) Cuahuila in Riverside County.

1. The mines at Pala consist of the famous lepidolite mine from which the well-known specimens of rubellite come and the spodumene mine, about a mile away, which has already been described by the writer. The immense deposits of lithia minerals at the lepidolite mine occur in a pegmatite dike striking across a large body of diorite and dipping towards the west at a low angle. This dike is about a mile long and has a thickness of from twenty to eighty feet.

The pegmatite, in which large bodies of lepidolite and other lithia minerals occur, consists of a coarse muscovite-granite with garnets and black tourmalines. There are at least four of these large bodies of lepidolite exposed, only one of which is at present being mined. A conservative estimate of the size of this body of lepidolite, now in sight, would be $200 \times 100 \times 25$ feet. In some parts radiated groups of rubellite occur, and near the northern end of the body quartz and feldspar become rather abundant and the deposit seems to grade into the normal muscovite-pegmatite.

The pink clay—so often associated with gem tourmalines—occurring here has been determined to be halloysite. A large deposit of pure amblygonite, showing broad cleavage faces, has been uncovered. Numerous well-terminated green tourmalines, with complex combinations, have also been found, as well as several pounds of native bismuth and its oxidation products, bismuthinite and bismutosphærite. The bismutosphærite occurs in grayish-black masses and also as a yellow powder. A qualitative test showed the presence of carbonic acid and the absence of water. Doubly terminated quartz crystals are not uncommon. The list of minerals from this mine so far identified is lepidolite, tourmaline (black, green, pink), amblygonite, orthoclase, muscovite, quartz, kaolinite, halloysite, garnet, plagioclase feldspar, bismuth, bismuthinite and bismutosphærite.

At the spodumene mine the following minerals have been identified: tourmaline (black, pink, blue, blue-green), spodumene, lepidolite, beryl (pink), quartz, muscovite and orthoclase.

Very pale green, colorless and lilac-colored spodumene has been found in the mountains a few miles east of the mine.

2. The Mesa Grande district is the most important one for tourmalines. Two mines, only one of which was accessible to the writer, are situated here, both being located on the same series of pegmatite dikes. The country rock in which these muscovite-granite dikes occur is a diorite.

In the mine visited three such dikes are being followed, only one of which is at all rich in tourmalines. The dikes, only a few feet in thickness, dip southwest at an angle of 45° and are usually not much decomposed. Sometimes, however, the granite has become altered to a red clay and then this is carefully searched for loose tourmalines. Lepidolite is not abundant and is usually rather coarse. Muscovite, with a lepidolite border, is of frequent occurrence. Several fine crystals of lepidolite have been found in this mine, one complete crystal measuring 10 mm. across the base and having a height of 6 mm.

The tourmalines are mostly pale pink, though some red ones of good color, as well as green ones, have been found. Several good achroites have also been found, one in the possession of the writer measuring 35 mm. in length and 14 mm. in thickness. Besides the minerals mentioned above, quartz and orthoclase in large, complete crystals are found here. Garnet and beryl occur in the immediate vicinity.

3. The geology of the Oak Grove mine is similar to that of the other localities. Some of the cut tourmalines from this mine are exceedingly brilliant. Several fine yellow tourmalines have been obtained here. The minerals occurring at this mine are the same as those found at the Mesa Grande mine.

4. The Cuahuila locality is similar to the others, and the list of minerals found here includes tourmaline (pink, green, blue, blue-green, smoky, colorless, yellow and black), spodumene (the amethystine variety), beryl

(transparent pink crystals, one measuring 110 × 75 × 65 mm. and weighing 850 grams), lepidolite, pink andalusite, muscovite, orthoclase and quartz.

The field is certainly a very interesting one and is well worth further study. Many of the minerals occur in good crystals having rich combinations of forms, and the color of some of the specimens suggests interesting chemical possibilities. It is probable that with further exploration the list of minerals will be considerably increased.

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U. S. Geological Survey.

A NOTE ON RHIZOCTONIA.

The bean crop in the vicinity of St. Louis was severely injured this year in many instances by *Rhizoctonia,* sp. which not only attacked the stems and larger roots of the plants, but also produced brown, sunken areas on the surface of the pods, penetrating the latter and discoloring the seeds. An examination of a number of seeds whose surface was discolored disclosed the fact that the mycelium of the fungus had established itself in the seed coat and in many instances had formed minute sclerotia there without rotting the seed or even penetrating the cotyledons. Pure cultures of *Rhizoctonia* were easily obtained from a number of mature discolored beans which had been carefully removed from diseased pods. The presence of the fungus does not prevent the germination of the seed, as was proved by a test. From this it follows that a very common means of disseminating *Rhizoctonia* on the bean is through diseased seed, and that seedsmen should be careful not to send out discolored beans.

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QUOTATIONS.

THE CARNEGIE INSTITUTION.

It is worth pointing out that the almost inevitable outcome of the present policy will be a centralization of a very objectionable kind. If the activities of the Carnegie Institution were to be wholly confined to aiding individuals here and there, that end could have been best attained by dividing the endowment among the leading institutions of learning, under such restrictions as might have been necessary. Every such organization could then have determined for itself, better than a central one at Washington, what the needs of its professors were, and what might be the importance of their work. It could have established branch stations at least as well as can the Washington institution. It could have sought out the exceptional man with even better chances of finding him, because its field of knowledge would have been wider than that of any central authority. Each could, for itself, have selected the best research-assistant to be found.

Now, instead of this result, we actually have a central authority passing judgment upon the relative importance of the work being done at all the institutions of learning from which applications may come, and aiding them, or refusing aid, according to their judgment. One very probable outcome of this has not been sufficiently considered. It must tend, to a greater or less extent, to diminish the spirit of individual effort, just as gifts are apt to do in many other walks of life. This effect will be intensified by a very obvious and reasonable provision announced by the institution as governing its action. It does not propose to undertake anything that is being well done by other agencies. It would, of course, be superfluous to assist a professor in cases where the patrons of his own institution could be induced to do so. The latter will naturally not be very liberal in giving their funds if the Carnegie Institution can be successfully appealed to. If the appeal is a failure, that failure will be a reason against the project in the mind of a possible donor. The dilemma will be that of Omar: If the Carnegie Institution can be induced to support your work, our aid is not needed; if it can not be so induced, the object is not worthy of our support. Of course, it is not claimed that this consideration will be universal, or will be operative immediately and in all cases. But to suppose that it will never be operative in any degree is contrary to every principle of human nature.